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## (54) Game

(57) Apparatus for playing a game comprises mounting means (2) having rotatably mounted about it a plurality of elements (4) rotating about a common axis (5), at least part of the mounting means (2) being visible and arranged to clearly define a plurality of playing sectors (7) subtending an angle at the common axis (5) equal to the angle subtended by each other playing sector (7), each element (4) being arranged to define a number of sectors (9) equal to the number of playing sectors (7), each sector (9) including at least one playing position (10), and, for each playing position (10), coloured pegs or the like for converting the playing position from a first state to a second visually different state. The elements (4) may be rotated such that sectors (9) are aligned. The rules specify that in use the mounting means (2) is in a fixed position and the elements (4) are rotated with respect to it; that the aim of the players is to have all the playing positions (10) in each sector (9) of each element (4) aligned with their playing sector (7) in one state and, the circumstances in which the elements (4) are rotated and in which the state of the playing position (10) may be changed.

Figure 1

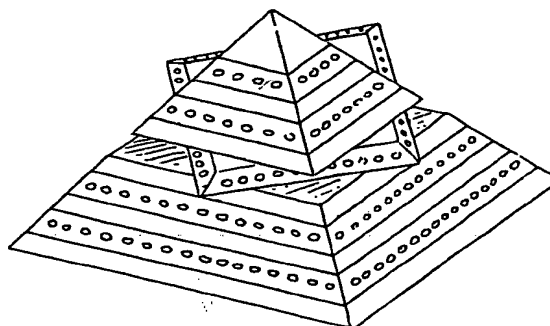
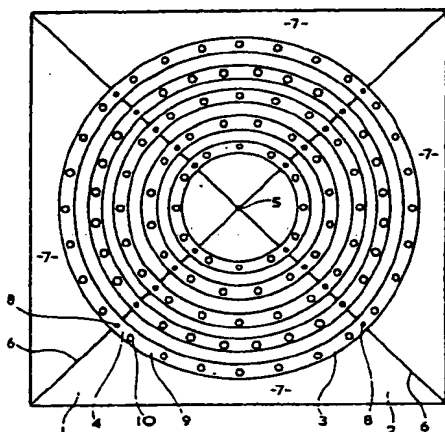


Figure 5

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy

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Figure 1

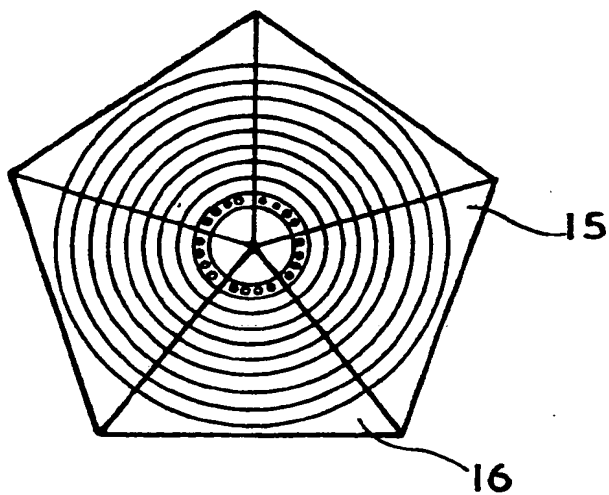
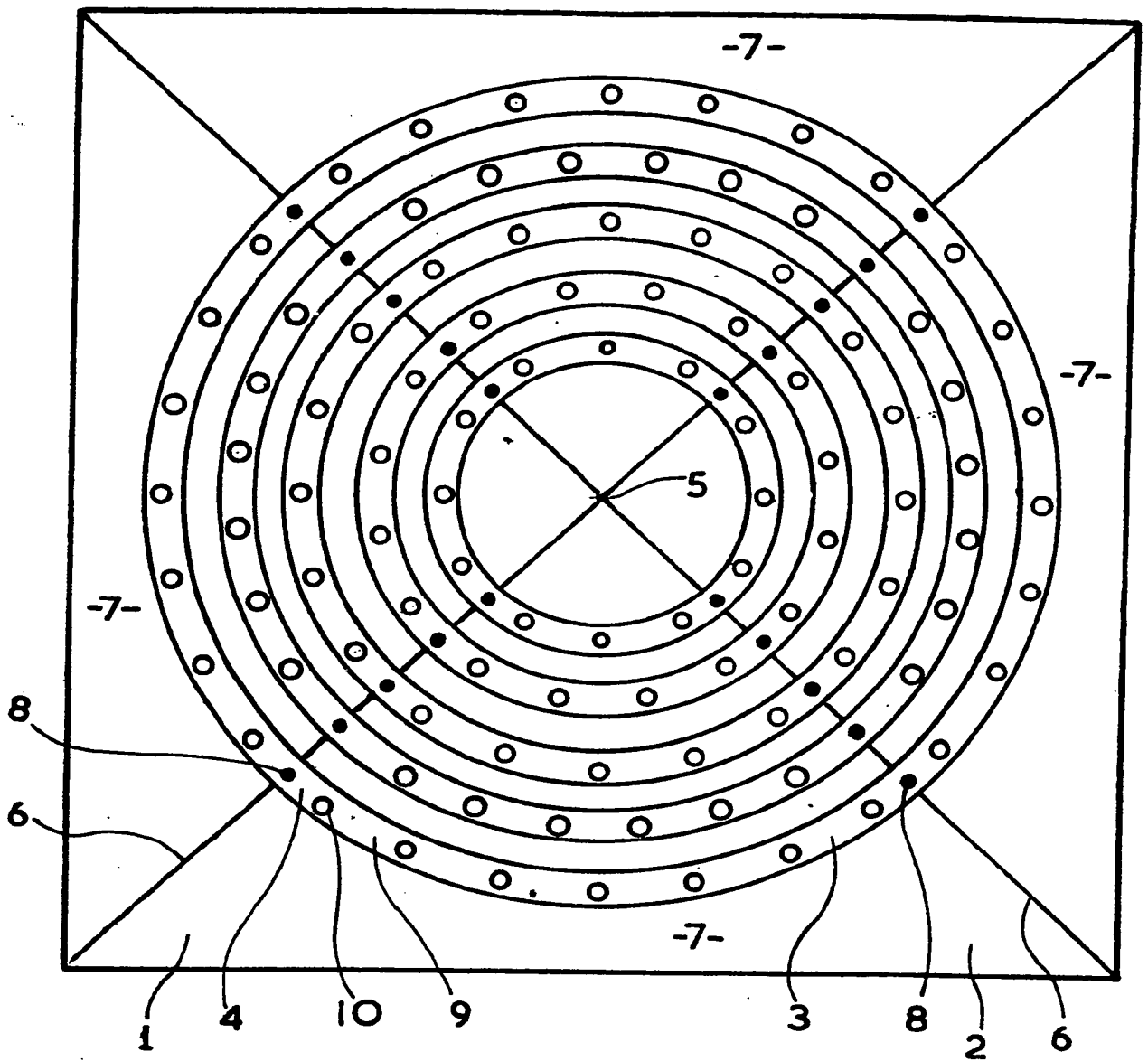


Figure 2

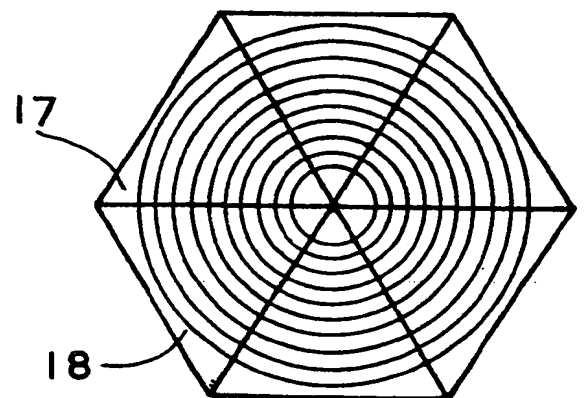


Figure 3

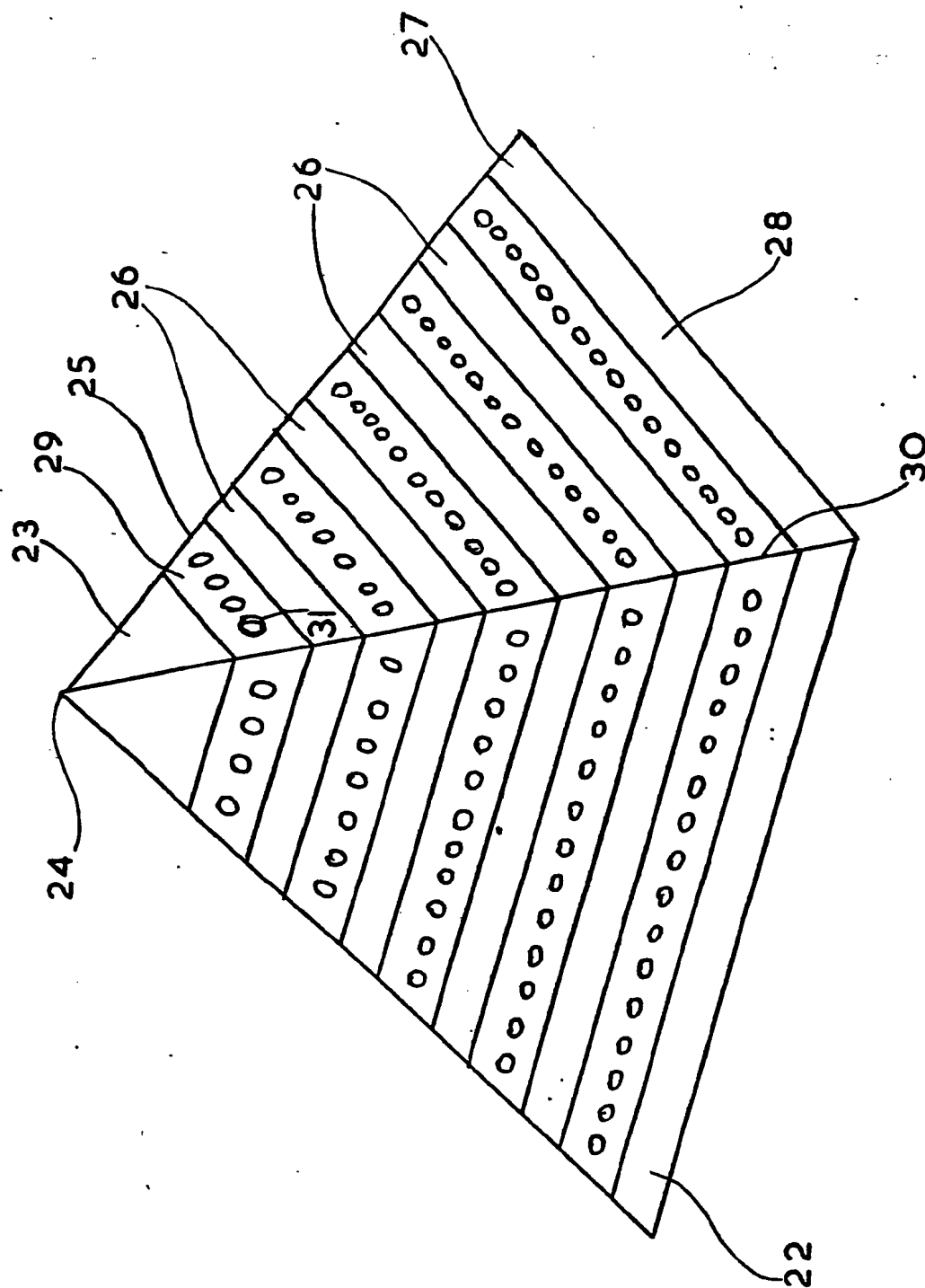


Figure 4

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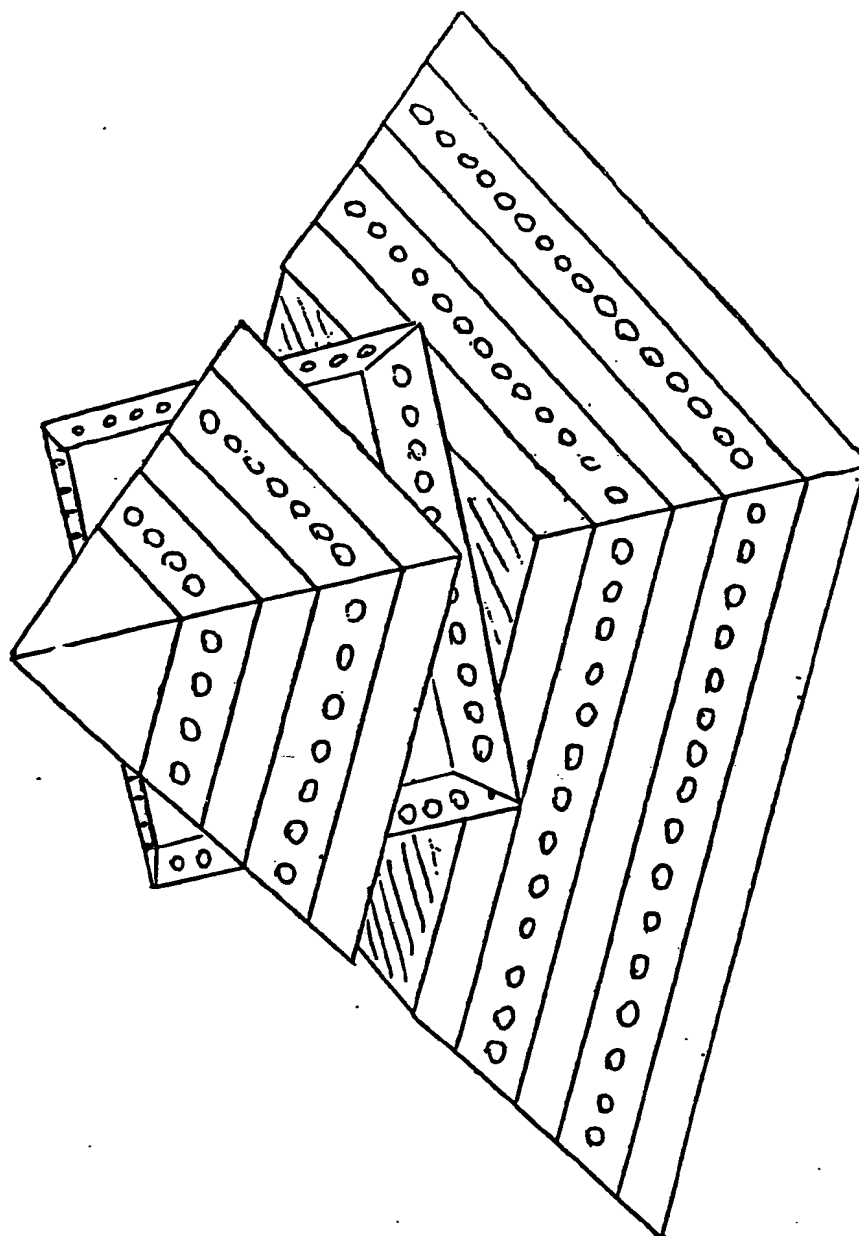


Figure 5

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Figure 6

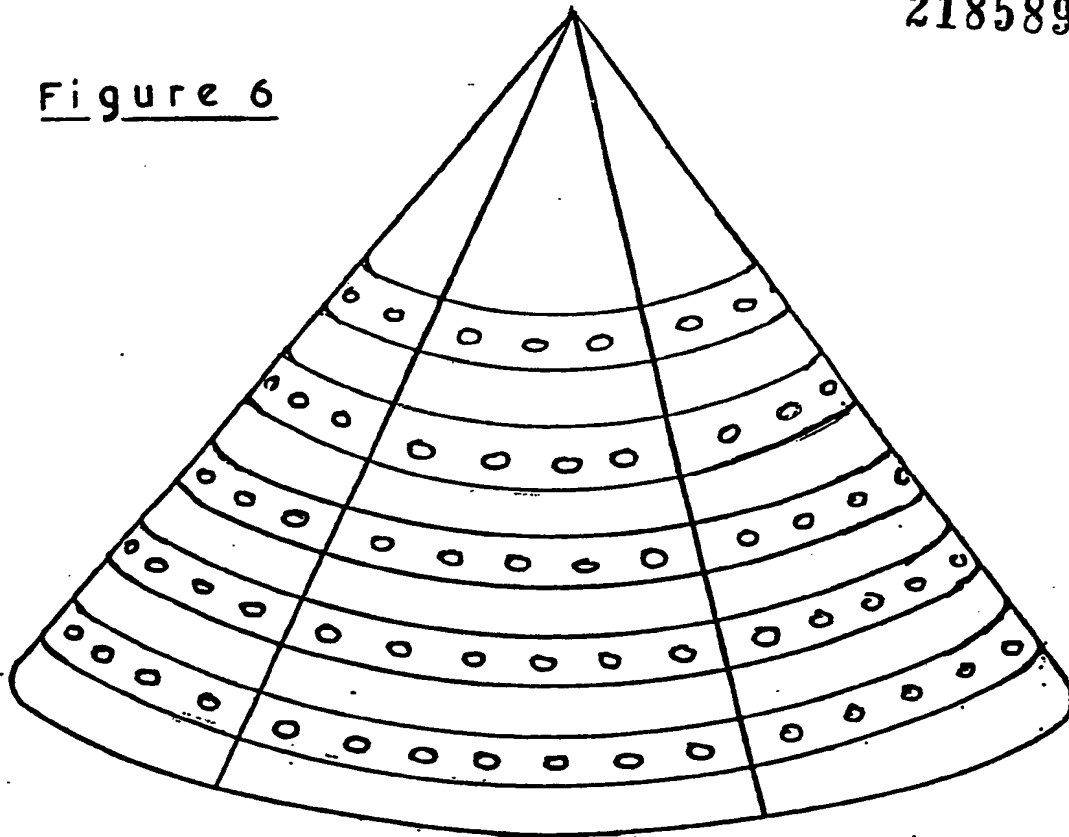
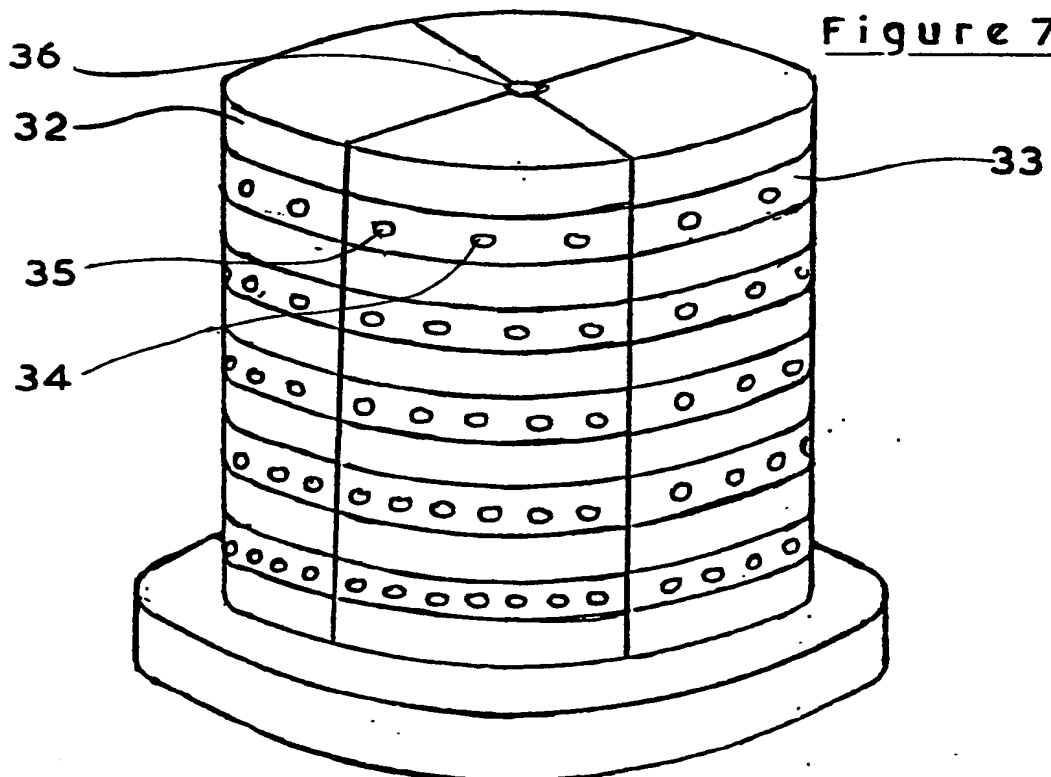


Figure 7



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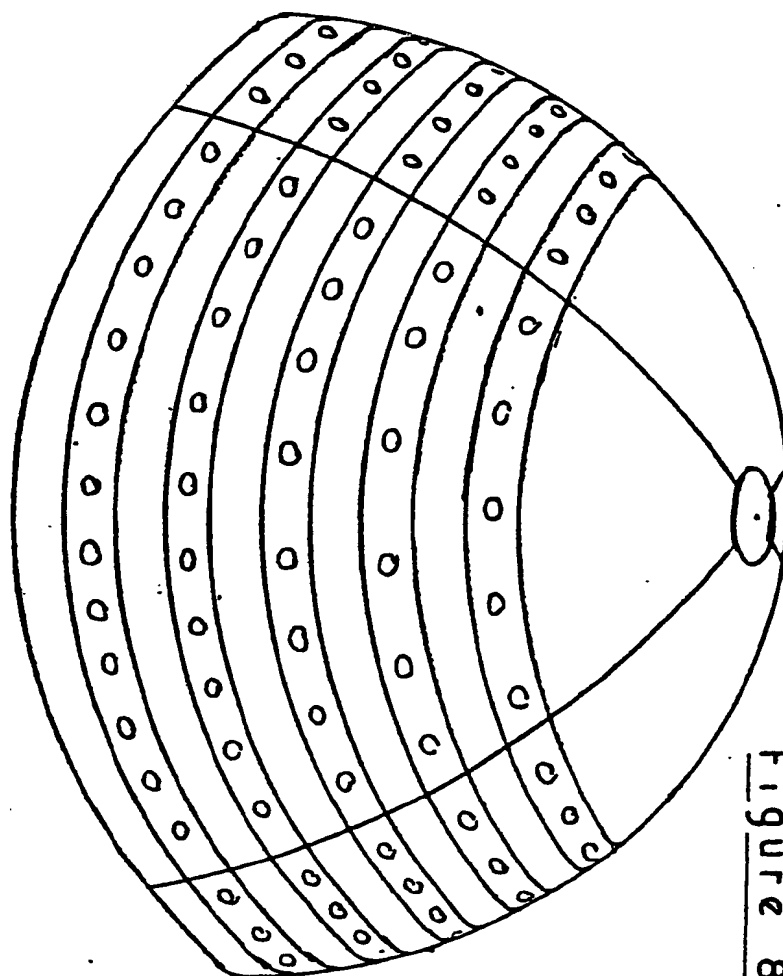
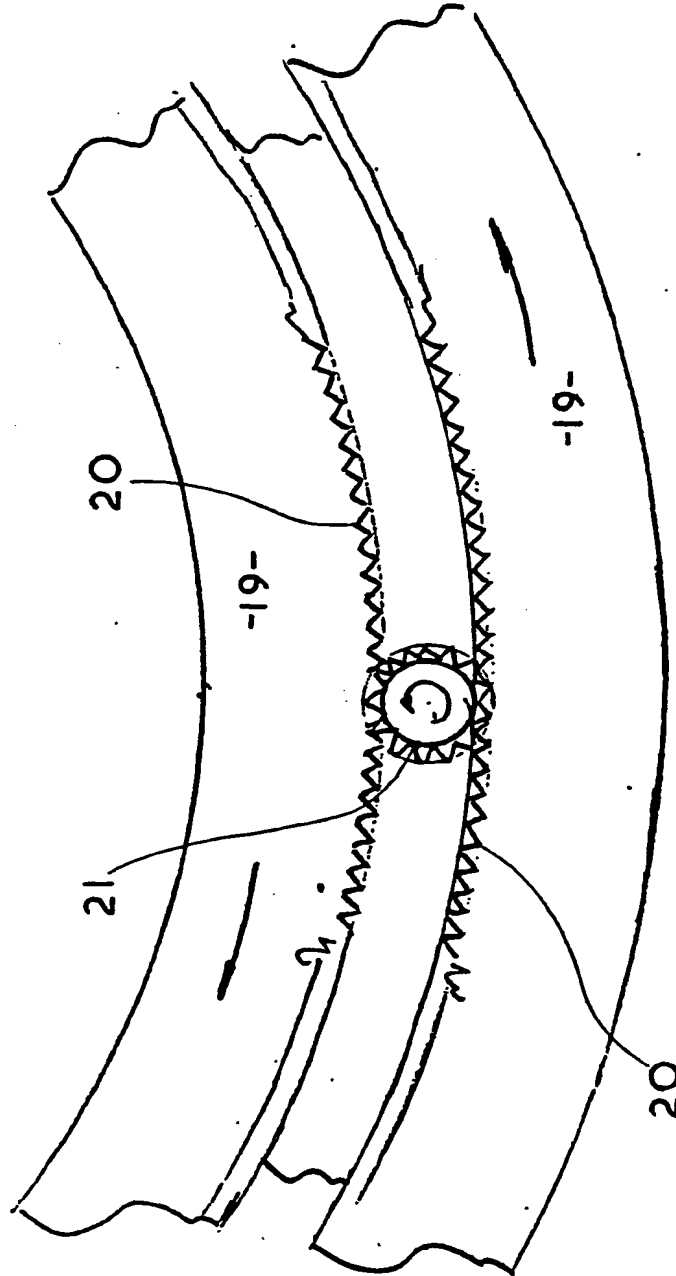


Figure 8

Figure 9



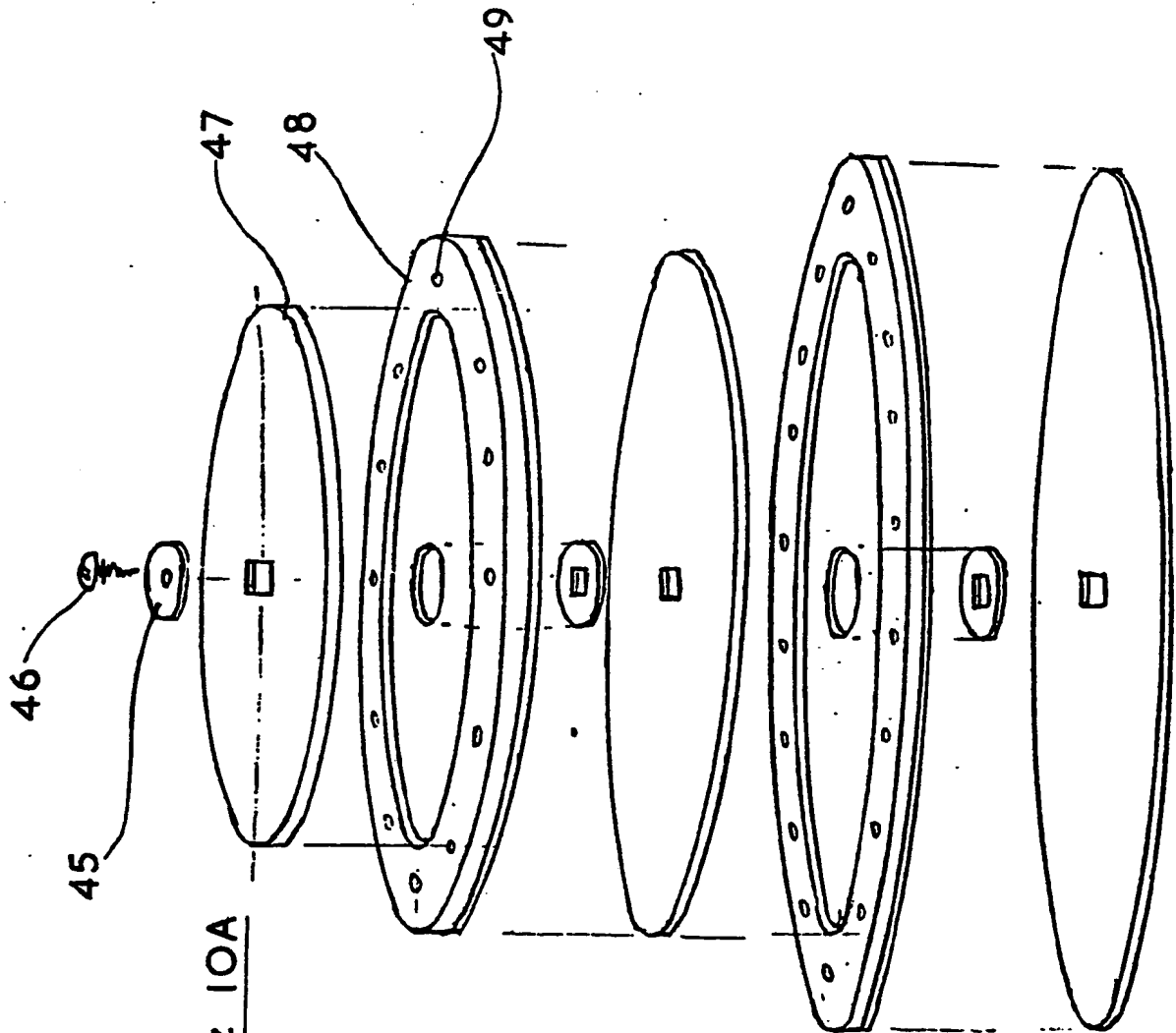
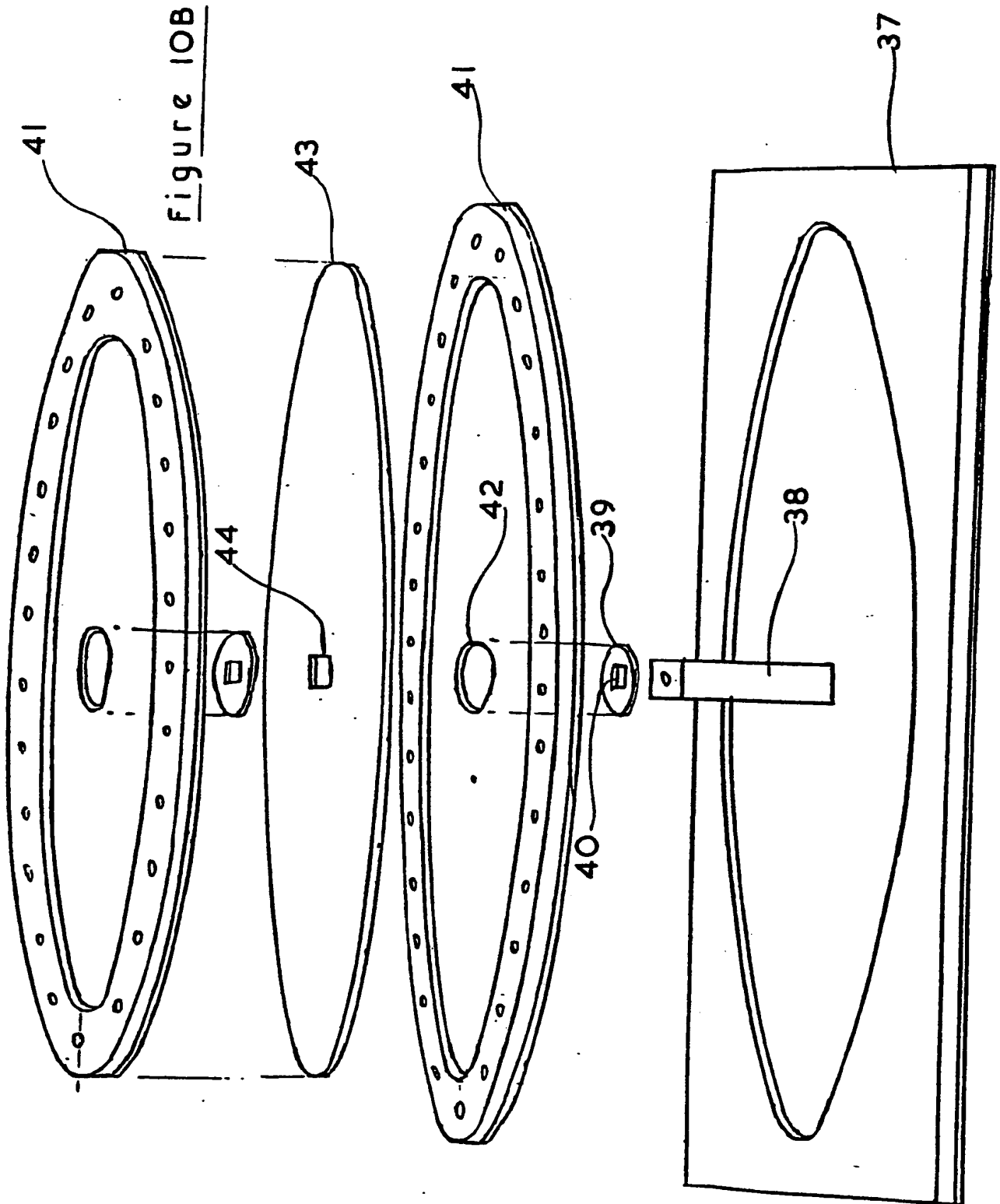


Figure 10A





19 JAN. 87- 01023

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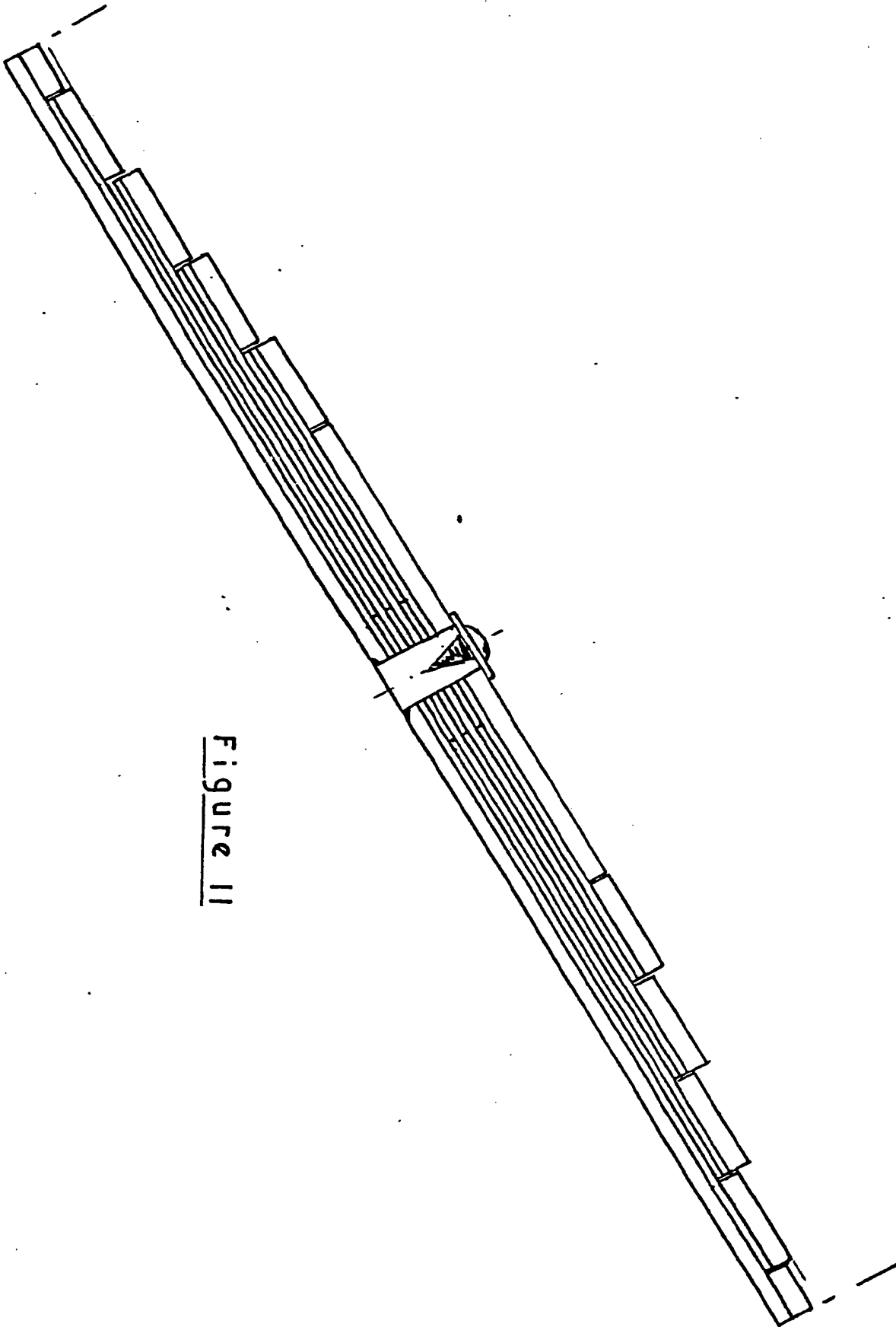
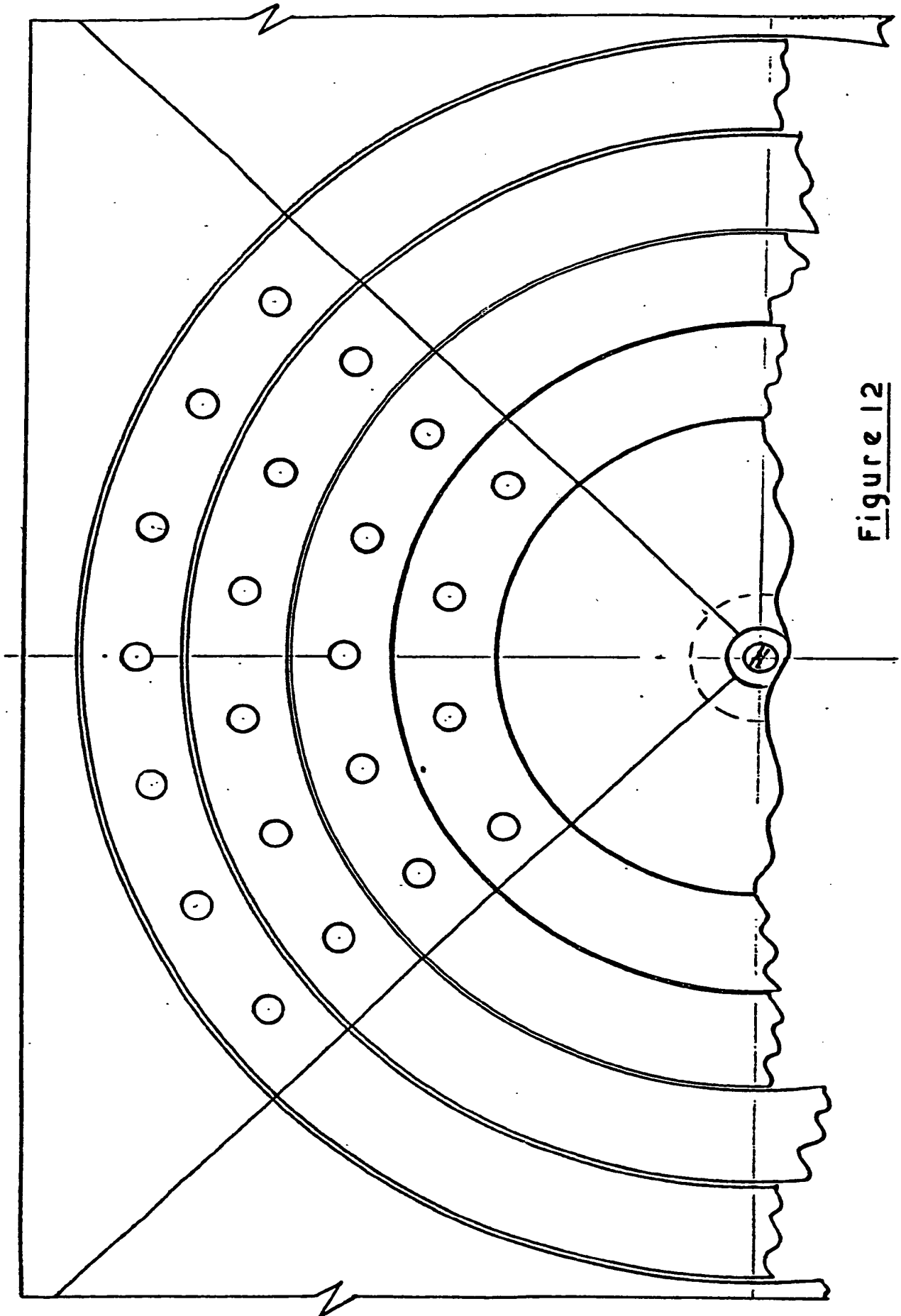
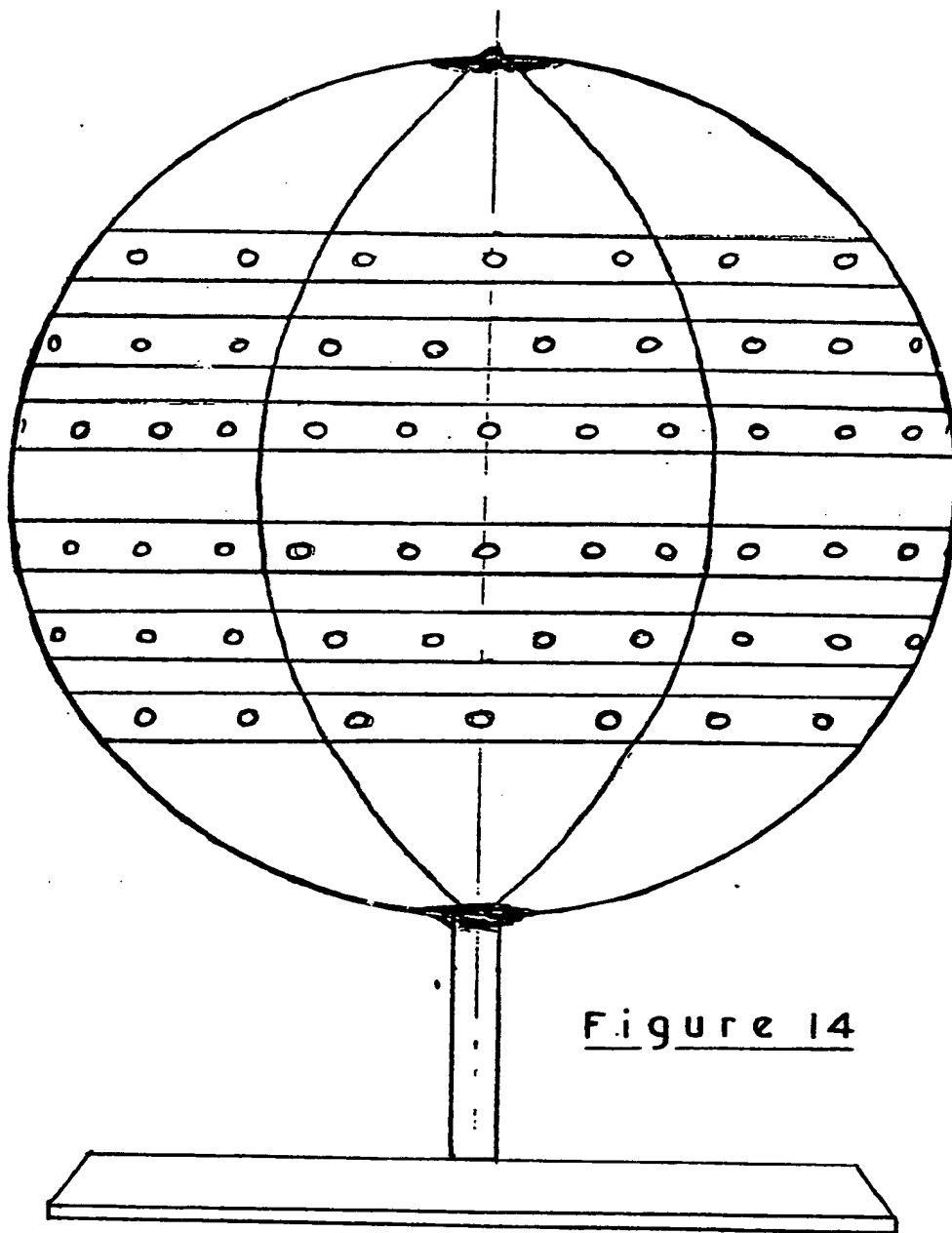


Figure 11

Figure 12

19 JAN. 87- 01023

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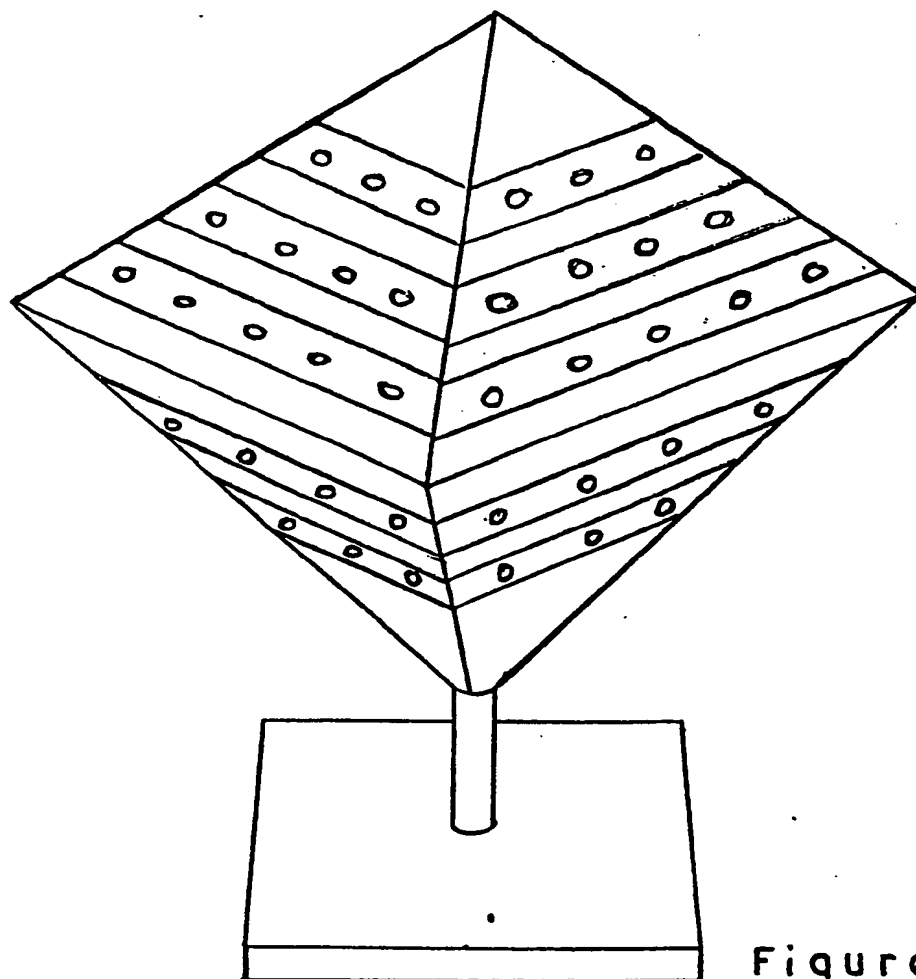


Figure 15

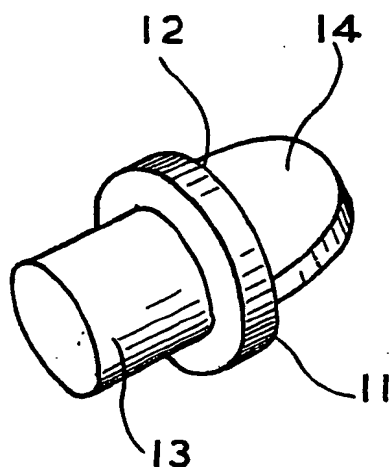


Figure 13

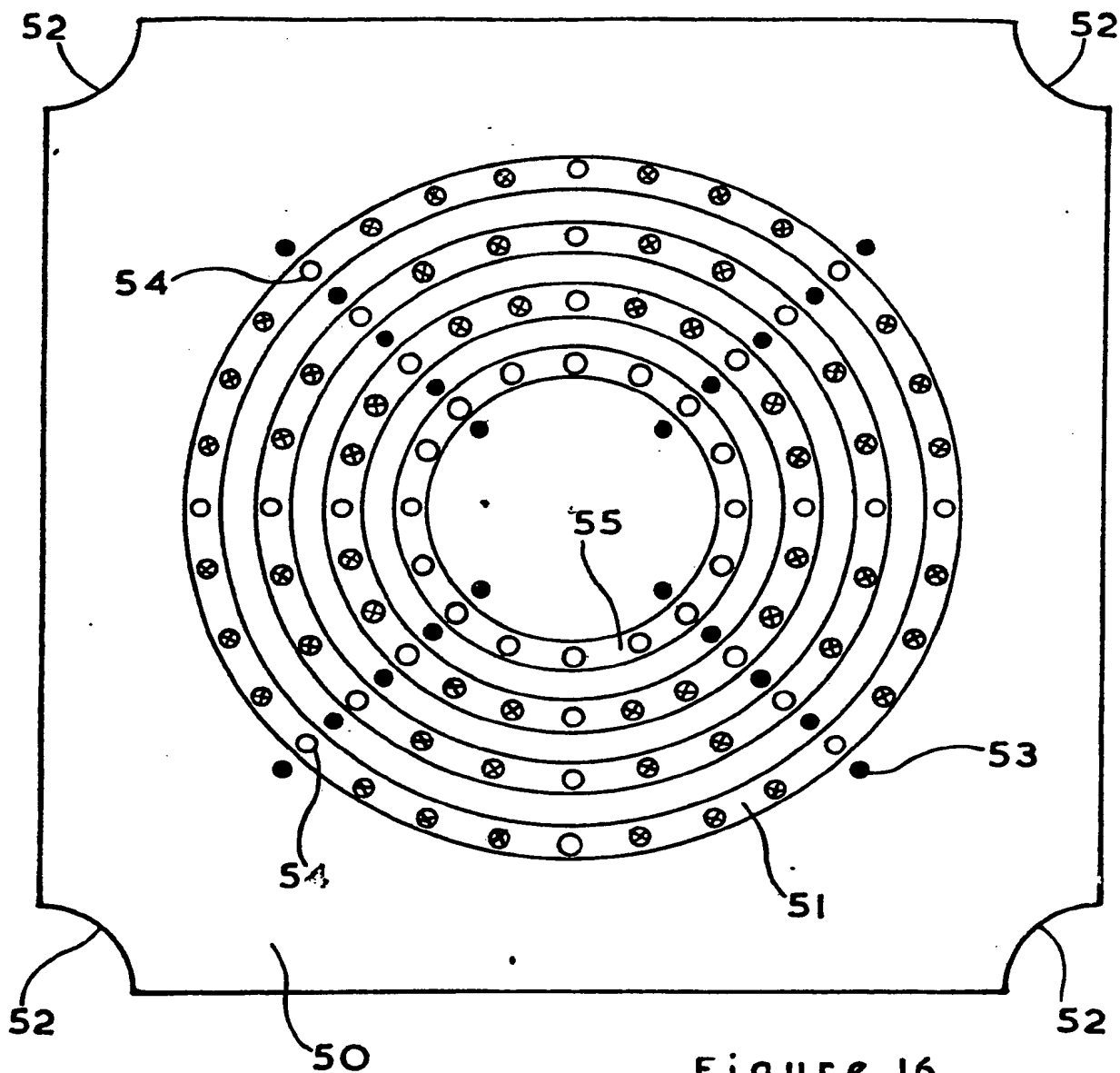


Figure 16

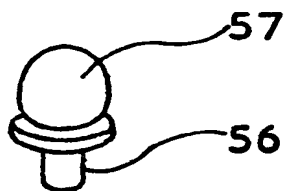


Figure 17

## SPECIFICATION

### Game

#### Field of the Invention

- 5 The invention relates to apparatus for playing a game which can be played in accordance with rules which do not depend on chance.

#### Summary of the Invention

- 10 According to the invention there is provided apparatus for playing a game, comprising mounting means having rotatably mounted about it a plurality of rotating elements, the elements all rotating about a common axis, at least part of the mounting means
- 15 being visible and arranged to clearly define a plurality of playing sectors, each sector subtending an angle at the common axis of rotation equal to the angle subtended by each other playing sector, each element being arranged to define a number of
- 20 sectors, the number of sectors included in each element being equal to the number of playing sectors, and each element sector subtending an angle at the common axis equal to the angle subtended by the other sectors of that element, each
- 25 sector of each element including at least one playing position, and, for each playing position, means for converting the playing position from a first state to a second state, the first and second states being visually different from one another; each sector of
- 30 an element including a number of playing positions equal to the number of playing positions included in each other sector of that element; the arrangement being such that the elements may be rotated such that a sector in each element is aligned with each
- 35 playing sector, and, in which at least one playing sector and its aligned element sectors can be seen by each player of the game;
- the apparatus being played in accordance with rules which specify:
- 40 that in use the mounting means is in a fixed position and the elements are rotated with respect to it; that the aim of the players is to have all the playing positions in each sector of each element aligned with their playing sector in one state and,
- 45 the circumstances in which the elements are rotated and in which the state of the playing position may be changed.

- Since the numbers of sectors in each element is equal, if the angle subtended by each sector in one
- 50 element is different from the angle subtended by the sectors of another element, then there will be clearly parts of some of the elements which are not included in any sectors. It is therefore preferred that the angle subtended by the sectors of each element
- 55 are the same and all are equal to the angle subtended by the playing sectors.

- The apparatus may be in the form of a board. In this case, the elements have surfaces which lie in the same plane as the mounting means and all
- 60 rotate about a common axis. In order to allow rotation of these elements, they must be in a ring form. In this case the elements comprise a series of concentric rings. In this case the elements are mathematically similar in shape and each player can
- 65 clearly see all the playing sectors and all the sectors

of each element.

- Alternatively, the apparatus can be in three dimensional form. This is arranged by arranging the elements one above another all rotated about a
- 70 common central axis. If the surfaces of the elements included in the playing positions are normal to the axis of rotation, then clearly the elements will have to be of different sizes so that a surface of each of the elements will be visible. However, if the surface including the playing positions is parallel to the axis of rotation, then the elements can be all of the same size.

- An example of apparatus in which the surface to be viewed of the elements is normal to the axis of rotation is one in which the elements comprise a
- 80 plurality of discs having different radii. The smallest disc is placed on top and the discs beneath are arranged in order of increasing diameter so that the largest disc is lowermost. This will have the same appearance of its upper surface as the two
- 85 dimensional board in which the elements comprise a series of concentric rings.

- In some cases the surface to be viewed by the players is not normal to the common axis but it is angled to it. Such a case arises when the apparatus
- 90 has the appearance of a cone, a square based pyramid, or a hemisphere. In all these cases the mounting means provides part of the surface of the shape but the elements are arranged one above the
- 95 other about a common axis in gradually increasing size.

- If the elements are provided all of the same diameter and having the surface including the playing positions parallel to the common axis,
- 100 apparatus resembling a cylinder is produced.

- In the cases where the board is three dimensional and the playing positions can be seen when viewed in a direction normal to the common axis of rotation it is possible dependant on the height of the
- 105 apparatus for only part of the elements to be viewable by a player. This adds to the skill of the game because each player cannot see all his opponents sectors and so does not know which state the playing positions are in in his opponents
- 110 sector.

- In the case where the elements are co-planar rings, the only way that the elements can rotate is if the shape of all the elements was similar. However, in all other cases the elements do not have to be all of similar shape. It is, however, preferred that they
- 115 are of similar shape since this allows apparatus of elegant smooth shape to be produced.

- In the case where the elements are disc-like rings or circles, the only way that the sectors can be defined on the elements, is to mark the surface of the elements including the playing positions. This may be by drawing a line on the element but it is preferred that projections in the element define the sector edges since these projections can be used to
- 120 help rotate the elements.

- In the case where the elements are of a different shape, for example where the apparatus is a square based pyramid, the elements will all have four corners. This conveniently defines four sectors and
- 125 here no further marking of the elements would be

required to define a sector.

The elements may be independently movable such that rotation of one element does not affect the position of the other elements. However, in a further embodiment of the apparatus two or more of the elements may be inter-connected such that rotation of one element causes rotation of another element.

The playing position on each element and the means to change the state of a playing position can be any type of apparatus which can be easily moved from one state to another. Examples of this are as switches which can be in an open or closed position or a hook which can either have a ring placed on it or removed from it. Preferably however the playing position comprise a bore in the element into which may be fitted a marker peg. The presence of the marker peg in the bore represents one state of the playing position and the absence of the marker peg from the bore indicates a second state. Clearly the state of a playing position can easily be changed.

The number of elements and playing positions within the elements can be chosen according to the degree of difficulty required for the game. For example, with apparatus to be played by younger children, only two or three rings are required each including two or three playing positions. However, for a more difficult version of the game six or seven elements may be used including up to seven or eight playing positions on some of the elements.

There is clearly no reason for the number of playing positions in the sectors of each element to be the same. It is merely sufficient that at any one time with a sector of each element being aligned with a playing sector for there to be the same number of playing positions situated in each playing sector. This gives an equal chance to all the players.

The number of sectors into which each element is divided dictates the number of people who can play the game at one time. Typically this number will be four but the number of sectors could be increased to five or six if the game is to be played by more than four people at a time. In some cases, as with the case where the apparatus resembles a square based pyramid, the only convenient number of sectors to divide the elements into is four.

It is preferred that the elements are spaced apart from each other by part of the mounting means. Preferably this part of the mounting means is also visible to the players and this part of the mounting means is also arranged to define the angle subtended by the playing sector. This makes it very easy to align all the elements and sectors with the playing sector.

The rules of the game specify that the players in turn can move a pre-determined number of elements and a pre-determined number of sectors left or right. It also allows a player to change the state of one or more playing positions. The game starts with all the playing positions being in one state and the aim of the game is to change all the playing positions in your own playing sector to the other state. If the playing position on a sector of an element is changed to a playing sector of player one then it will be advantageous to player one. However, when player two's turn comes the element including

that sector may be rotated such that the playing position in the changed state may now lie in the playing sector of player two which is, therefore, to his advantage. Thus the game is one in which skill and logic is required.

It is preferred that the game is to be played such that only skill is required to win the game. However, it is possible to introduce an element of chance into the game by using a die or any other random number selection means to determine which elements are to be moved.

It is also possible to provide apparatus in accordance with the invention for playing games with specific themes. This can be done by making the apparatus in a shape and colour which reflect the theme, and by ensuring that the playing position is arranged to reflect the theme. For example, if the apparatus is in the form of a board having marker pegs which are placed in bores in the elements, the marker pegs may have curved heads which are coloured to represent different coloured balls in a snooker game. In this case the board can be painted green and have pockets marked upon it, although they have no purpose. The rules of the game can include extra rules which specify which coloured marker pegs can be removed in which order.

Alternatively an extra element can be added to the game to have an educational theme. This can be done when the apparatus is in the form of a board. In this case if the main positions are represented by bores into which marker pegs are inserted, the board can be arranged so that they are large enough to see through with the bores extending straight through the rotatable element to expose a surface on the mounting means marked with different symbols, which may for example have to be correctly identified by the children playing the game.

It is also possible to provide apparatus in accordance with the invention which also includes a micro-processor. Such a game can be played in a similar fashion to that of a computer controlled chess game in which, whenever a playing position is changed, this will register on the computer as will the rotation of one of the elements of the apparatus. The computer can then calculate the position and specify the next move of the apparatus. The electronics involved will be readily apparent to the man skilled in the field of computer controlled games.

#### Brief Description of the Drawings

Twelve examples of apparatus for playing a game in accordance with the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:—

Figure 1 is a plan view of a first example of apparatus;

Figure 2 is a schematic plan view of a second example of apparatus in accordance with the invention;

Figure 3 is a plan view of a third example of apparatus in accordance with the invention;

Figure 4 is a perspective view of a fourth example of apparatus in accordance with the invention;



Figure 5 is a schematic view of the apparatus shown in Figure 4 showing the element being rotated;

Figure 6 is a perspective view of a fifth example of apparatus in accordance with the invention;

Figure 7 is a perspective view of a sixth example of apparatus in accordance with the invention;

Figure 8 is a perspective view of the seventh example of apparatus in accordance with the invention;

Figure 9 is a schematic view of the inside of an eighth example of apparatus in accordance with the invention;

Figures 10A and B together form an exploded perspective view of a ninth example of apparatus in accordance with the invention;

Figure 11 is a section through the apparatus through Figure 10A and B;

Figure 12 is a plan view of the apparatus of the Figures shown in 10 and 11;

Figure 13 is a perspective view of a marker peg for use in the first to the eleventh examples of the apparatus;

Figure 14 is a perspective view of a tenth example of apparatus in accordance with the invention;

Figure 15 is a perspective view of an eleventh example of apparatus in accordance with the invention;

Figure 16 is a plan view of a twelfth example of apparatus in accordance with the invention; and Figure 17 is a perspective view of a marker peg for use in the twelfth example of the apparatus.

#### Description of the Preferred Embodiments

A first example of apparatus for playing a game is shown in Figure 1. The apparatus 1 is one in which the game is played on a board 2 which allows the apparatus to fall into a board game category.

The backing board 2 forms mounting means and includes a series of five concentric grooves 3. Within each of these grooves 3 is placed a rotating element 4 in the form of a ring. The five rings 4 all rotate about a common axis 5. In this case most of the mounting means 2 is visible and it is clearly marked with lines 6 to define four playing sectors 7. Each playing sector subtends an angle at the common axis 5 equal to the angle subtended by each other playing sector 7. In this case since there are four sectors the angle subtended is  $90^\circ$ .

Each element 4 includes four projections 8. These projections 8 are arranged to define the limits of four sectors 9. Each of these sectors 9 subtends an equal angle at the common axis 5. In this case since all of the element 4 is to be included in a sector the angle subtended by sector 8 is equal to  $90^\circ$ .

Each sector 8 of each element 4 includes at least one playing position 10. In this case the sectors of the innermost element includes three playing positions, the next includes four playing positions, the third includes five playing positions, the fourth six and the outer ring includes seven playing positions 10. It is not important that the number of playing positions in the sectors of different rings are equal but the playing positions 10 in each sector of the same ring are equal.

Each playing position 10 is defined by a small cylindrical bore and the apparatus also includes a supply of pegs 11 shown in Figure 13 which are suitable for use with all the examples of apparatus shown in the drawings. The peg 11 includes a head 12 of bright colour and a shank 13 which is cylindrical and fits closely within the bore 10. A projection 14 on the head allows the peg to be grasped to hold it to move the peg in and out of the bore 10. A first state playing position 10 is indicated by the presence of a peg 11 within the bore 10 and a second state of the playing position 10 indicated by the absence of the peg 11 from the bore 10. Visually these two states are very different and easily noticeable by the players.

With the first apparatus 1 the rings 4 may be rotated until the markers 8 are aligned with the line 6 such that a sector 9 of each element 4 is aligned with each playing sector 7 and in this position all sectors are visible by all the players of the game.

In this case the game may be played by two, three or four players. The apparatus is played in accordance with the following set of rules.

Before the start of each game the markers 8 are aligned with the line 6. The markers 11 are placed in a receptacle in the centre of the board 2.

The players play in turn, the first to play being chosen and thereafter playing clockwise around the board.

At each turn of play the players must place one marker 11 into playing position 10 on any element 4 in a sector 9 in his playing sector 7 and may then turn any one of the elements 4 to the right or left by either one or two sectors, thus replacing his sector 9 by that of an opponent. As the game progresses the player may place two markers 11 into position at each turn of play in which case he must remove one marker from any position in his sector.

In a game for two or three players the unplayed sectors may become populated with markers 11 and this may be of advantage to any player.

The player gaining a sector with all the playing positions filled with markers first is the victor.

If two players are playing, each player may operate two sectors, either side by side or opposite positions. In a game for four players the movement of the elements 4 may be limited to movements of one sector only to the left or right.

If a further game is then to be played by the players it is quicker to fill the board with markers such that each playing position 10 is filled with a marker 11. The next game progresses in the same way as the earlier game but with the change of state of the playing position being from the second state to the first state, ie removing the marker peg instead of replacing them. The aim of the game in the second version is to have a playing sector 7 with all the playing positions 10 without a marker peg 11.

The game may also be played in accordance with alternative rules which specify that more than one element 4 can be rotated in any one turn and more than one marker can be moved at any one turn. This tends to speed up the playing of the game considerably.

In a second example of the game the apparatus 15

is very similar to the first example of the game. However, here the board 16 is a pentagon shape and the board is marked into five playing sectors.

In a third example of the game the apparatus 17 again is similar to the first and second examples of the game. However, here the board 18 is hexagonal and divided into six playing sectors. This allows for the game to be played by more players.

In all these first three examples of apparatus the elements 4 move independently of one another. However, it is possible to modify these three examples of the game as shown in Figure 9 to give an eighth example of apparatus for playing the game. In an eighth example of apparatus the elements 4 are concentric rings 19 which have toothed surfaces 20. The apparatus also includes cogwheel 21 which engage the teeth 20 so that movement of one ring 19 in one direction produces equal opposite movement in adjacent ring 19. This gives an added element to the tactics of the game.

A fourth example of apparatus for playing a game is shown in Figures 4 and 5. This apparatus 22 is in the form of a square based pyramid. The mounting means 23 comprises part of a square based pyramid and having a central axle, not shown, passing vertically down from the apex 24 of the pyramid 22. Five elements 25 include a central bore (not shown) which allows the elements 25 to rotate about a common axis. Parts 26 between the movable elements 25 are fixed with respect to the central apex 25 and in use are held in position. In many cases the base 27 of the pyramid 22 will be mounted on a board to fix the pyramid in position. Each face of the pyramid defines a playing sector 28 and each element 25 includes a face 29 lying within the plane of the face 28 of the pyramid. This face 29 is at an angle to the normal of the common axis and can be viewed both from above the apex or to the side of the pyramid 22. The elements 25 are all of a similar shape, the sizes of the elements 25 increasing towards the base of the pyramid.

The corners 30 of the pyramid and of the elements 25 form natural boundaries for the sectors 28 and 29 which are clearly visible to the players. Each sector 29 of each element includes a plurality of playing positions 31, the number increasing as the size of the element increases. The number of playing positions 31 in each other sector is equal to the number of playing positions in each other sector of that same element. Here the playing positions 31 and surface 29 of the element 25 comprise bores which receive marker pegs 11 as shown in Figure 13. As can be seen in Figure 5 the elements 25 can be rotated with respect to the pyramid independently of the other elements.

Clearly the surface of the pyramid is marked into four sectors each subtending an angle of 90° at the common axis. If the pyramid 22 is a low pyramid then the players can see all faces of the pyramid. However, it is possible to produce such a pyramid of greater size and height such that a player can only see his own playing sector 28 and the sectors 29 of each element aligned with it.

A fifth example of apparatus in accordance with the invention is cone shaped in which the surface of

the elements including the playing positions is at an angle to the normal to the central rotation axis.

The sixth example of apparatus 32 is a cylindrical shape. Here the elements 33 are all discs of the same diameter. The surface 34, 35 are parallel to the axis 36 about which the elements rotate.

In a seventh example of the apparatus the apparatus is in the form of a hemisphere as shown in Figure 8. In the fifth, sixth and seventh example of the apparatus, the playing positions and means to change their state are as described in connection with the first apparatus.

A ninth example of apparatus in accordance with the invention is shown in detail in Figures 10A and 10B. Here the mounting means includes a baseboard 37 and a square post 38 onto which are mounted via washers 39 which include square bores 40 to accommodate the square post 38, a series of discs 41. The discs 41 include cylindrical bores 42 so that the discs 41 can rotate with respect to the washers 40. The discs 41 are all of different diameter with the disc of largest diameter lying closest to the baseboard 37. Between each pair of discs 41 is a fixed disc 43 which includes a square bore 44 for accommodating the square post 38 which does not allow the disc 43 to rotate with respect to the post 38. At the top of the apparatus is a washer and screw 45 and 46 respectively which screw into the post 38 to fasten the pieces together. The uppermost disc 47 is a fixed disc.

Because the discs 41 are of progressively increasing sizes a surface 48 of each disc is visible when the discs are placed together. This surface 48 is normal to the axis of rotation of the discs. The surface 48 includes a plurality of playing positions 49 which comprise bores into which markers may be placed. The bores 49 are spaced equally around the surface 48. The surface 48 is divided into four equal sectors by lines (not shown in Figure 10A but shown in Figure 12).

In use the whole of each element 41 and the mounting means is visible by all the players. Although the discs are placed one above the other as can be seen in Figure 11 the finished apparatus is not very thick and can, therefore, be stored in a conventional games box.

The advantage of these apparatus is that they can be used to play a game which depends entirely on the skill of the players.

However, if desired, it is possible to include with the apparatus a die or a number of dice to introduce an element of chance into the game which dictates the number of sectors each element may be rotated. However, this does tend to take away some of the skill needed to play the game.

Figures 14 and 15 show two further embodiments of the apparatus. In this case each of the mounting means includes a pole projecting upwards from a base on which the rotating elements can rotate. The tenth and eleventh examples of apparatus all include bores defining the playing positions, which in use are filled with marker pegs such as those shown in Figure 13.

From the various shapes shown in the different examples of the apparatus it can be seen that there

are many different forms that the apparatus can take, for example the square based pyramid shown in Figures 4 and 5 could equally be any solid which has a regular polygon as a base and tapers gradually to a point.

Each of the apparatus shown in Figures 4, 5, 6, 7, 8, 14 and 15 can be played in two different modes. If the apparatus is placed on the floor or a low table with the players overlooking the apparatus, each player can see all the sectors. However, for a harder game, if the apparatus is then moved to a higher table where the apparatus is at eye level of the players, they can only see their own sector and perhaps part of the sector of the adjacent players. This gives added interest to the game.

The twelfth example of the apparatus is as shown in Figure 16. In structure it is very similar to the first example of the apparatus, including a backing board 50 having rotatably mounted upon it four concentric rings 51. In this case, to maintain the theme of a snooker game, the board 50 is coloured green and has cutouts 52 at each corner to represent the pockets on snooker tables. The concentric rings 51 are clear perspex through which the green of the board 50 can be seen therethrough. The board 50 is marked into four sectors, each subtending an angle of 90° at the centre by a series of aligned black dots 53. Each concentric ring 51 is also split into four sectors which are divided from each other by four white spheres 54 arranged equi-distantly around in 51. The white spheres 54 represent the white balls of a snooker match and are used to be grasped by the players to rotate the rings as necessary. The outermost ring 51 includes seven playing positions defined by seven bores, with the inner two rings including five playing positions, and the innermost ring 55 having three playing positions. Into these bores are placed marker pegs 56 as shown in Figure 17. As can be seen, the head of the marker peg 56 is a small sphere 57, and these can be coloured to represent different coloured balls of a snooker match. Each playing sector has fourteen marker pegs with a red head 57, and these are inserted in the positions represented with a cross, with the other playing positions being occupied by marker pegs having heads of colours yellow, green, brown, blue, pink and black which are placed within the player's sector in an arrangement similar to the arrangement of the same coloured balls on a snooker table. The game is played in accordance with rules which specify that the object of the game is to "pot" or remove all the marker pegs 56 in a section. The rules specify that the players play in turn clockwise around the table. At each turn of play each player may turn one ring 51 to the left or right by either one or two sections, either before removing a marker peg or after. At each turn of play the player must remove either two marker pegs marked with a red head, or red marker peg and a colour peg. The colours may only be removed when there are six or less reds in a section.

The colours must be removed in snooker sequence i.e. first yellow, then green, then brown, then blue, then pink, then black, and only when accompanied by the removal of a red peg. If a

player, after returning a ring, has no reds but some colours remaining he is snookered and he must replace two reds in any position on his section and may not remove any balls in that turn. The game ends when one player has removed all the marker pegs from this section and is the winner. Thus a game is provided which does have the theme of snooker, but is not just a game of chance.

It will be appreciated that there are many modifications which can be made to the apparatus described to provide further examples of apparatus in accordance with the invention. In the games such as the first, second and third examples of the apparatus, the playing positions are defined by a bore. If desired a further element can be added to the game by having a form of marking on the backing board, which is visible through the bores 10. These may be symbols which have to be correctly matched or identified by the players thus providing an effective educational tool whilst also providing an enjoyable game.

It will also be appreciated by games players that this is the form of game which could be played controlled by a micro-processor, such as a computer controlled chess game. The electronics used in such a computer controlled chess game will be understood by the skilled addressee of the specification to be readily adaptable to allow computer controlled play of the game using apparatus in accordance with the invention. The computer will be able to sense when a playing position has had its state changed, and when a sector has been rotated. From this the computer will be able to calculate the next stage of play and indicate this to the other players. This will provide a very effective training apparatus for teaching logic.

## CLAIMS

1. Apparatus for playing a game, comprising mounting means having rotatably mounted about it a plurality of rotating elements, the elements all rotating about a common axis, at least part of the mounting means being visible and arranged to clearly define a plurality of playing sectors, each sector subtending an angle at the common axis of rotation equal to the angle subtended by each other playing sector, each element being arranged to define a number of sectors, the number of sectors included in each element being equal to the number of playing sectors, and each element sector subtending an angle at the common axis equal to the angle subtended by the other sectors of that element, each sector of each element including at least one playing position and, for each playing position, means for converting the playing position from a first state to a second state, the first and second states being visually different from one another; each sector of an element including a number of playing positions equal to the number of playing positions included in each other sector of that element; the arrangement being such that the elements may be rotated such that a sector in each element is aligned with each playing sector, and in which at least one playing sector and its aligned element sectors can be seen by each player of the

- game; the apparatus being played in accordance with rules which specify: that in use the mounting means is in a fixed position, and the elements are rotated with respect to it; that the aim of the players is to have all the playing positions in each sector of each element aligned with their playing sector in one state and, the circumstances in which the elements are rotated and in which the state of the playing position may be changed.
- 10 2. Apparatus according to Claim 1, in which the angle subtended by the sectors of each element are the same and all are equal to the angle subtended by the playing sectors.
- 15 3. Apparatus according to Claims 1 or 2, in which the elements comprise a set of concentric rings mounted such that their upper surfaces lies in the same plane as the mounting means.
- 20 4. Apparatus according to Claim 1 or Claim 2, in which the elements are arranged one above another all rotated about a common central axis.
- 25 5. Apparatus according to Claim 4, in which the surfaces of the elements are normal to the axis of the rotation, and the elements have respective different cross-sectional areas arranged with the elements of largest area lowermost and the smallest uppermost.
- 30 6. Apparatus according to Claim 4, in which the surfaces of the element are parallel to the axis of rotation.
- 35 7. Apparatus according to Claim 6, in which the elements all have the same cross-section to form a block of constant cross-section.
8. Apparatus according to Claim 4, in which the surfaces of the elements are not parallel and not perpendicular to the axis of rotation.
- 40 9. Apparatus according to Claim 8, in which the elements mounted on the mounting means have a shape of a pyramid, a cone, a semisphere or a sphere.
- 45 10. Apparatus according to any of the preceding claims, in which rotation of each element is independent of rotation of each other element.
- 50 11. Apparatus according to any one of Claims 1 to 10, in which rotation of at least one element causes rotation of at least one other element.
- 55 12. Apparatus according to any one of the preceding Claims, in which each playing position is defined by a bore into which a marker peg may be inserted, one state of the playing position being absence of a peg in the bore and the other state being presence of a peg in the bore.
13. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 of the accompanying drawings.
14. Apparatus for playing a game arranged substantially as described herein, with reference to and as illustrated in, Figures 1 and 13 when modified in accordance with Figure 2 of the accompanying drawings.
15. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 to 13 when modified in accordance with Figure 3 of the accompanying drawings.
16. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 to 13 when modified in accordance with Figures 4 and 5 of the accompanying drawings.
17. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 to 13 when modified in accordance with Figures 4 and 5 when modified in accordance with Figure 6 of the accompanying drawings.
18. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 when modified in accordance with Figures 4 and 5 when modified in accordance with Figure 7 of the accompanying drawings.
19. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 when modified in accordance with Figures 4 and 5 when modified in accordance with Figure 8 of the accompanying drawings.
20. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 when modified in accordance with Figure 9 of the accompanying drawings.
21. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 when modified in accordance with Figures 10A and B, 11 and 12 of the accompanying drawings.
22. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 when modified in accordance with Figure 14 of the accompanying drawings.
23. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 when modified in accordance with Figure 15 of the accompanying drawings.
24. Apparatus for playing a game arranged substantially as described herein with reference to, and as illustrated in, Figures 1 and 13 when modified in accordance with Figures 16 and 17 of the accompanying drawings.

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